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ABSTRACT

The relationship of population characteristics to school and college enrollments in Illinois are discussed. Emphasis is placed on the numbers of youth and educational attainment. The author suggests that although the Illinois high school graduation rate is lower than that for the nation, the college participation rate of people who do graduate from Illinois high schools is higher than the national average. The need for public policy in the area of college enrollment is recommended. Appendices include statistical data. (MJM)

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I

POPULATION CHARACTERISTICS
THEIR RELATIONSHIP TO SCHOOL AND COLLEGE ENROLLMENTS

by

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I

POPULATION CHARACTERISTICS - THEIR RELATIONSHIP TO SCHOOL & COLLEGE ENROLLMENTS

At no time in the history of Illinois has the demand upon educational services been as great as it has been during the past two decades. Two factors are responsible for this phenomenon; (a) a dramatically increasing number of youth in our population now representing a large proportion of the total population, and (b) increased retention of these youth in the educational pipeline.

Numbers of Youth

The increased birth rates experienced after 1945 continued at a high level until 1965 when they dropped to the birth rates typical of the depression years. The higher birth rates experienced during the twenty year period following WW II have created a "bulge" of young people (See Figure 1), and this "bulge" of ages 5 through 24 in 1970 represents 37% of the State's total population.

The 17-year-old population (defined as the average of 17 and 18-year-olds) provides a convenient group to study in detail. They can be compared to high school graduation rates because high school completion is normally accomplished within the state of residence; the 17-year-old population forms the base for policy regarding higher education enrollments; and the characteristics of the Illinois 17-year-old population can be studied through 1988 by utilizing the recent census tabulation of the live population by age group.

Figure 2 presents the growth of the 17-year-old population from 1930 through 1970, and it projects this age group through 1988. The 17-year-old population is not projected to peak until 1978. It will decrease by approximately 20% between 1978-1986 then *increase again* when the children born to the members of the post WW II "baby boom" (who are now child bearing adults) begin to create a new bulge in the 17-year-old population.

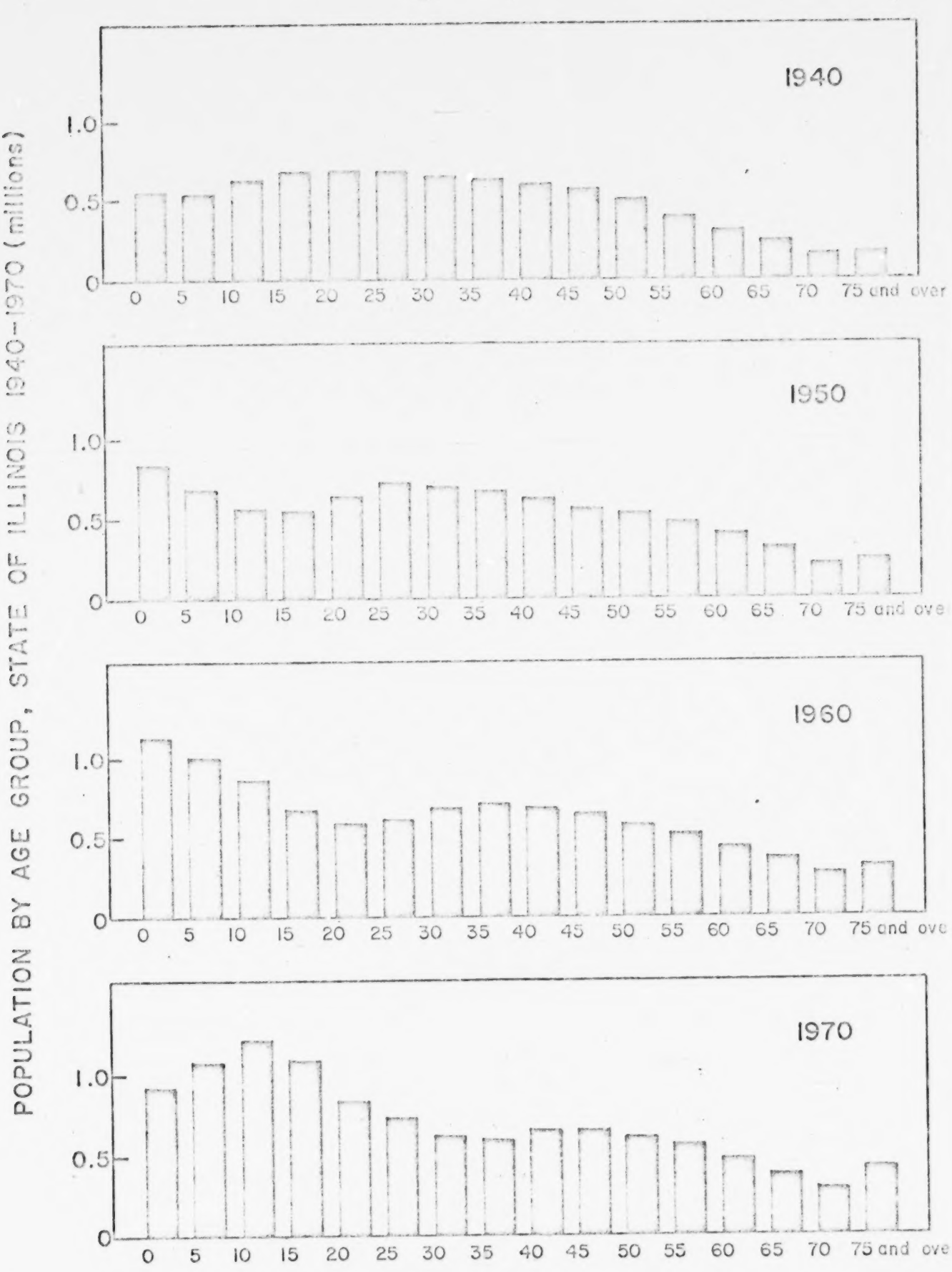
POPULATION BY AGE GROUP, STATE OF ILLINOIS 1940-1970 (millions)
1940
1950
1960
1970
1.0
0.5
0
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 and over

FIG. 1

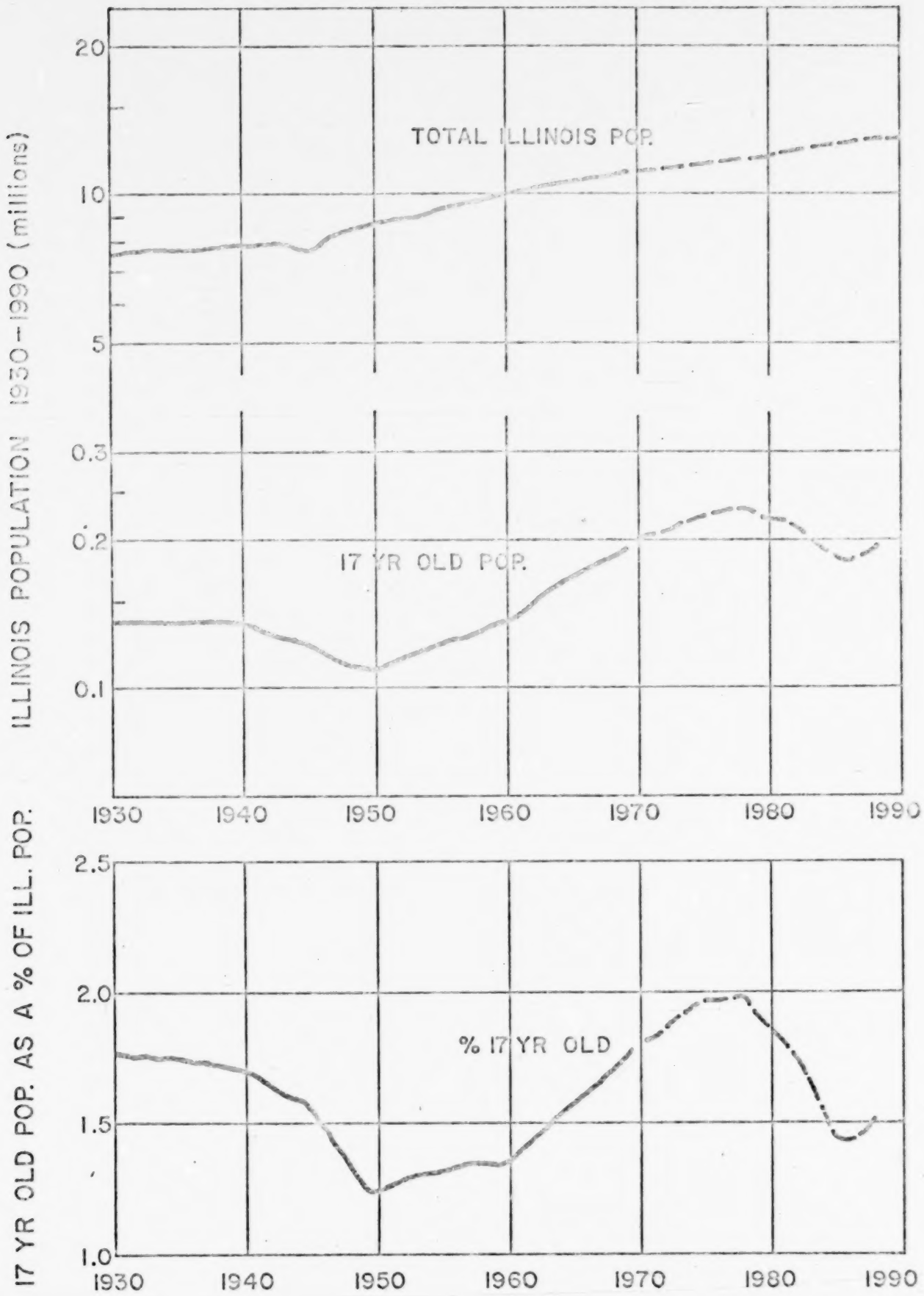
ILLINOIS POPULATION 1930-1990 (millions)
TOTAL ILLINOIS POP.
17 YR OLD POP.
17 YR OLD POP. AS A % OF ILL. POP.
% 17 YR OLD
20
10
5
0.3
0.2
0.1
2.5
2.0
1.5
1.0
1930
1940
1950
1960
1970
1980
1990

FIG. 2

The horizontal scale of Figure 2 can be shifted to the right by 12 years to create the population profile of the 5-year-old population. (That is, the 17-year-old population of 1960 was the 5-year-old population of 1948. The people who graduated from high school in 1960 began their school careers in 1948.) It is interesting to trace the past elementary school enrollment pressures which began in the early 1950's, and to observe the fact that while elementary school enrollment pressures have begun to decrease in the past few years, they will head up again by 1975. Even if the birth rate continues to decline during the 1970's, the total number of children born to the members of the post WW II "bulge" will very likely continue to increase through 1990.

Educational Attainment

Within the last three decades, a high school education has become the norm of educational attainment for the youth of the State and the Nation. Figure 3 presents for the State of Illinois a comparison of the 17-year-old population to the number of high school degrees awarded over time. The proportion of high school graduates among the 17-year-old population has doubled since the late 1930's and stands at a current graduation rate of approximately 80%. The important feature of this figure is the fact that high school graduates derived from the 17-year-old population are leveling off. Increases will continue to occur more slowly in the *proportion* of students obtaining high school degrees, but the *number* of people achieving this level of educational attainment will peak in the late 1970's, decrease for approximately a decade, then rise again to a new high before the end of this century.

How does the Illinois experience compare with national trends? Table 1 presents for each of the census years since 1930 a comparison of the high school graduation rates for the State of Illinois and for the Nation. It demonstrates that while Illinois' high school graduation rate lagged the Nation's graduation rate through the 1940's and

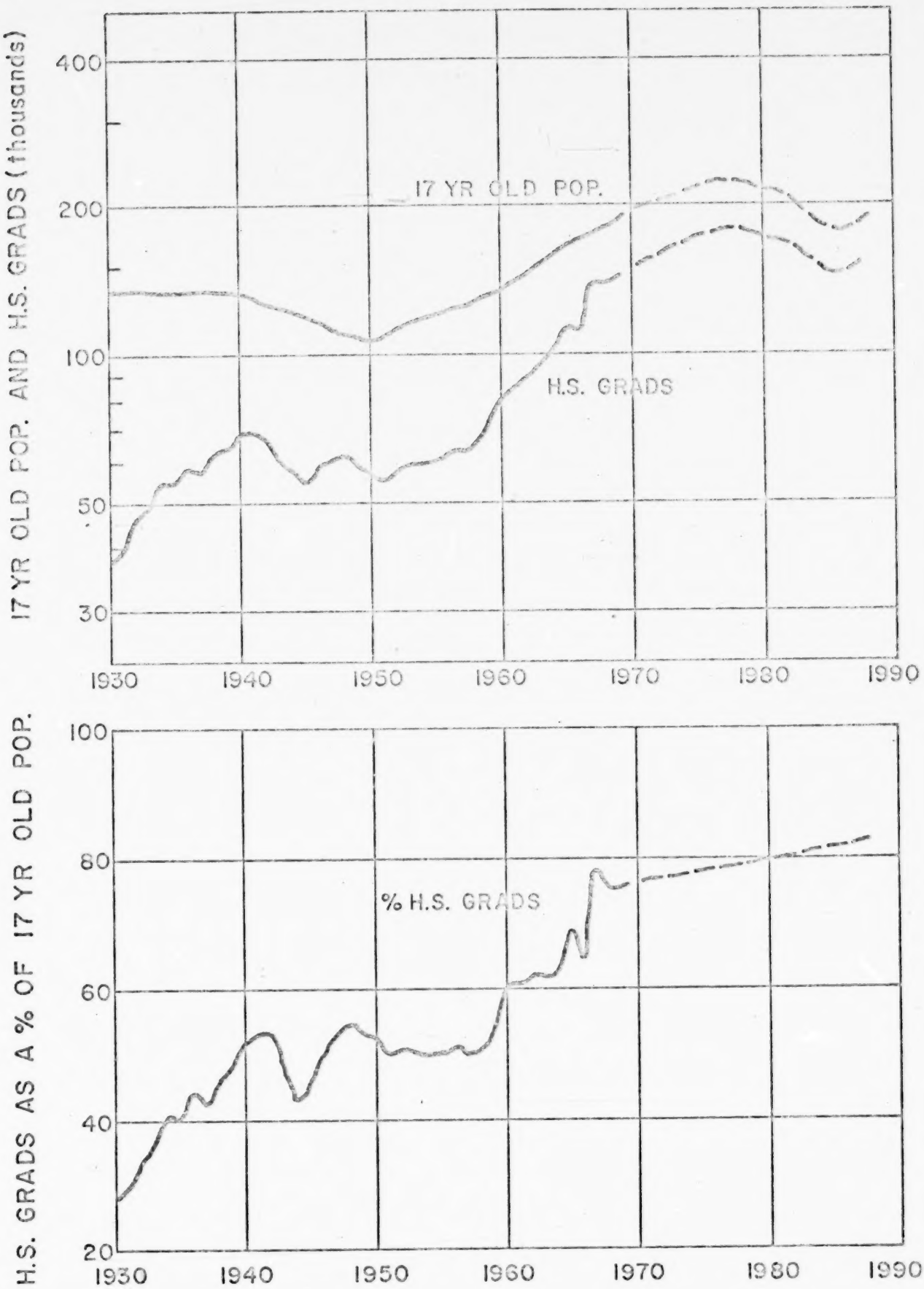
17 YR OLD POP. AND H.S. GRADS (thousands)
400
200
100
50
30
17 YR OLD POP.
H.S. GRADS
1930
1940
1950
1960
1970
1980
1990
H.S. GRADS AS A % OF 17 YR OLD POP.
100
80
60
40
20
% H.S. GRADS
1930
1940
1950
1960
1970
1980
1990

FIG. 3

1950's, a remarkable "catch up" period occurred in the 1960's. This catch up reflects the primary and secondary school enrollment pressures in the 1950's and 1960's and it is at least partially responsible for the college level enrollment pressures of the 1960's. During the next decade, the Illinois high school graduation rate is projected to continue to lag behind the national graduation rate.

TABLE 1[1]

	17-Year-Old Population (in thousands)		High School Graduates (in thousands)		High School Graduates As % of 17-Year-Old Population	
	United States	Illinois	United States	Illinois	United States (%)	Illinois (%)
1930	2,307	135	667	38	29	28
1940	2,486	135	1,221	70	49	52
1950	2,128	108	1,200	58	56	54
1960	2,719	137	1,864	83	69	61
1970	3,760	201	2,906	153	77	76
Projected 1980	4,042	221	3,386	176	84	80

An increasing proportion of Illinois high school graduates have sought some education beyond the 12th grade and this has been especially true during the last decade. College attendance statistics are not as easily related to the college age group because many students elect to attend college in states other than their home state. However, Illinois has historically exported more of its college age youth than have migrated into Illinois from other states, and while approximately 5% of the Nation's college age population are residents of Illinois, our colleges and universities enroll 6% of the Nation's college students. Add to this the net number of students migrating out of the State to enroll in colleges, and it is obvious that while our primary and secondary schools are not as degree-productive as the national average, those who do graduate from Illinois high schools enjoy a higher college participation rate than the national average.

Table 2 presents a comparison of the growth in the college age population for the Nation and the State of Illinois during the past decade. And it presents fall college enrollment statistics for the same period. While the size of the college age population increased by approximately 50% over the decade, the number of enrolled college age youth more than doubled.

TABLE 2[1]

	College Age Population (in thousands)				Fall Headcount Enrollment (in thousands)			
	United States		Illinois		United States		Illinois	
	Number	b '60 Index	Number	b '60 Index	Number	b '60 Index	Number	b '60 Index
1960	9,550	100	480	100	3,356	100	200	100
1965	12,127	127	584	122	5,177	154	295	148
1970	14,142	148	727	151	7,414	221	439	220

Future college enrollments are more uncertain. While the college age population can be projected from live births which have already occurred, a range of college enrollments must be projected because college enrollments are influenced by many factors including the state of the economy, changing attitudes toward education, financial support for college students, the changing structure of higher education, changes in admissions practices, etc. Table 3 presents estimates of the college age population through 1985 and a range of enrollment estimates for the Nation and the State of Illinois. It shows that (a) the college age population will not increase as much during the 1970's as it did during the 1960's; (b) college enrollment during the 1970's will increase at

least as rapidly as the age group increases; (c) college enrollment during the 1970's could possibly increase at a rate more than double the increase in the age group.

TABLE 3(1)

	College Age Population (in thousands)				Low Estimate Fall Enrollment (in thousands)				High Estimate Fall Enrollment (in thousands)			
	United States		Illinois		United States		Illinois		United States		Illinois	
	Number	b '70 Index	Number	b '70 Index	Number	b '70 Index	Number	b '70 Index	b '70 Number	b '70 Index	b '70 Number	b '70 Index
1970(act)	14,142	100	727	100	7,414	100	439	100	7,414	100	439	100
1975(est)	15,900	112	816	112	8,594	116	526	120	9,700	131	559	127
1980(est)	16,735	118	870	120	9,118	123	540	123	11,449	154	659	150
1985(est)	15,777	112	818	113	8,559	115	530	121	10,854	146	609	139

Conclusions

1. The birth rates between 1945 and 1965 created a youth bulge in our population which has in turn created increased demand upon the State's educational services from kindergarten through college. During the past decade, the college age population of Illinois has increased by about 50%. During the next decade, the college age population in the State of Illinois will increase by about 20%. In 1960, 61% of Illinois' 17-year-old population graduated from high school and in 1970 76% of Illinois' 17-year-old population graduated from high school. During that period, an increasing proportion of those high school graduates have enrolled in institutions of higher education. The high school participation rates have reached near saturation, and by the middle of this decade the real numbers of 17-year-olds will begin to decrease, reflecting the declining birthrates which ushered in the decade of the 1960's. However, before the end of the

century, enrollment demand will subside then increase again at different times for each segment of the educational pipeline.

2. As the children of the youth bulge mature, they create differential demand upon each segment of the educational pipeline from kindergarten through college. And it can be anticipated that in the late 1970's the leading edge of a second bulge will begin in kindergarten as the trailing end of the first bulge ends in college.

3. During the past few decades increasingly more people have been educated and the average person has been enrolled longer in the educational pipeline.

4. We are approaching the end of the exponential expansion of "consumption" of education:

(a) Projections of enrollment in the primary schools will depend entirely upon the numbers of births during the 1970's and not on changes in rates of enrollment since nearly all persons of compulsory school ages are enrolled.

(b) Projections of enrollment in secondary schools will increase until the mid 70's, decrease for approximately 10 years, and thereafter be dependent upon the number of births during the 1970's. Increases in the proportion of students of high school age attending and graduating from high school will very likely be small.

(c) Projections of college enrollments are most uncertain but it can be assumed that college enrollment pressures will continue to increase at a declining rate until the end of the 1970's. During the 1970's and beyond, college enrollment will depend upon a myriad of factors and the most significant of these factors is public policy yet to be developed.

5. While the Illinois high school graduation rate is lower than that for the Nation, the college participation rate of people who do graduate from Illinois high schools is higher than the national average.

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FOOTNOTE

[1] 1930-70 population data from Census of the Population; 1980 Population data source - unpublished data, Census Series P-25 #375; National enrollment and degree data source - Office of Education Projections of Educational Statistics to 1980-81 (1971 edition); State Graduation data source - Office of the Superintendent of Public Instruction; State Enrollment and Degree Source - Bureau of Institutional Research, University of Illinois.

APPENDIX TABLE I

POPULATION BY AGE GROUP, STATE OF ILLINOIS
1940 - 1970

Age Group	POPULATION			
	1970	1960	1950	1940
TOTAL	11,113,976	10,081,158	8,712,176	7,897,241
Under 5 years	936,950	1,130,246	842,842	546,962
5 to 9 years	1,098,592	1,002,802	684,347	542,759
10 to 14 years	1,134,688	868,370	565,347	618,280
15 to 19 years	1,011,062	686,563	542,280	672,996
20 to 24 years	843,644	581,748	639,444	687,842
25 to 29 years	747,420	608,892	712,531	683,556
30 to 34 years	636,444	679,502	691,503	643,176
35 to 39 years	608,497	709,164	678,289	612,917
40 to 44 years	660,435	676,271	622,686	579,785
45 to 49 years	669,810	643,632	569,734	561,573
50 to 54 years	626,744	572,020	528,615	493,139
55 to 59 years	568,193	513,756	479,109	385,511
60 to 64 years	477,843	433,269	401,148	300,782
65 to 69 years	377,859	373,445	311,223	235,125
70 to 74 years	294,427	281,978	207,718	165,281
75 and over	421,368	319,500	235,360	167,557
Median Age	28.6	31.2	32.7	31.5

Age Group	PERCENT DISTRIBUTION			
	1970	1960	1950	1940
TOTAL	100.0	100.0	100.0	100.0
Under 5 years	8.4	11.2	9.7	6.9
5 to 9 years	9.9	9.9	7.9	6.9
10 to 14 years	10.2	8.6	6.5	7.8
15 to 19 years	9.1	6.8	6.2	8.5
20 to 24 years	7.6	5.8	7.3	8.7
25 to 29 years	6.8	6.0	8.2	8.7
30 to 34 years	5.7	6.7	7.9	8.1
35 to 39 years	5.5	7.0	7.8	7.8
40 to 44 years	5.9	6.7	7.1	7.3
45 to 49 years	6.0	6.4	6.5	7.1
50 to 54 years	5.7	5.7	6.1	6.2
55 to 59 years	5.1	5.1	5.5	4.9
60 to 64 years	4.3	4.3	4.6	3.8
65 to 69 years	3.4	3.7	3.6	3.0
70 to 74 years	2.6	2.8	2.4	2.1
75 and over	3.8	3.2	2.7	2.1
Median Age	28.6	31.2	32.7	31.5

APPENDIX TABLE II

Educational Attainment of Illinois
17-18 Year Olds

1930-1968

Year	Number of 17-18/2 Year Olds	Number of High School Graduates	Ratio of High School Graduates to 17-18/2 Year Olds	Ratio of 17-18/2 to Total Illinois Population
1930	135,211	38,159	28.22	1.77
1931	135,149	39,683	29.36	1.76
1932	135,088	46,395	34.34	1.76
1933	135,027	48,759	36.11	1.75
1934	134,966	55,745	41.30	1.75
1935	134,905	54,163	40.15	1.74
1936	134,844	59,671	44.25	1.73
1937	134,783	56,954	42.26	1.73
1938	134,721	62,761	46.59	1.72
1939	134,660	64,639	48.00	1.71
1940	134,599	69,912	51.94	1.70
1941	131,985	69,253	52.47	1.66
1942	129,371	69,090	53.40	1.63
1943	126,756	61,594	48.59	1.60
1944	124,142	57,296	42.71	1.59
1945	121,528	55,666	45.81	1.56
1946	118,913	60,030	50.48	1.45
1947	116,299	61,746	53.09	1.39
1948	113,685	62,849	55.28	1.34
1949	111,070	58,913	53.04	1.24
1950	108,456	57,679	53.18	1.24
1951	111,342	55,581	49.92	1.26
1952	114,227	58,820	51.49	1.28
1953	117,113	59,309	50.64	1.30
1954	119,999	60,170	50.14	1.31
1955	122,884	61,413	49.98	1.32

APPENDIX TABLE II

Educational Attainment of Illinois
17-18 Year Olds[1,2,3,4]

1930-1968
(concluded)

Year	Number of 17-18/2 Year Olds	Number of High School Graduates	Ratio of High School Graduates to 17-18/2 Year Olds	Ratio of 17-18/2 to Total Illinois Population
1956	125,770	64,439	51.24	1.33
1957	128,656	63,036	49.00	1.34
1958	131,542	66,473	50.53	1.35
1959	134,427	72,135	53.66	1.35
1960	137,313	82,922	60.39	1.36
1961	143,454	86,270	60.14	1.40
1962	149,595	92,925	62.12	1.44
1963	155,736	96,170	61.75	1.49
1964	161,877	102,620	63.39	1.53
1965	168,018	115,006	68.45	1.58
1966	174,159	112,304	64.48	1.62
1967	180,301	141,883	78.69	1.67
1968	186,442	140,648	75.44	1.71

1 Data for age groups and Total Illinois Population for the years 1930, 1940, 1950 and 1960 were obtained from Census of Population, Bureau of Census.

2 Data for age groups and total population of the years in between these years were projected from straight-line equations.

3 Data for number of high school graduates from 1930-1966 were obtained from Biennial Report of the Superintendent of Public Instruction of the State of Illinois.

4 Data for number of high school graduates from 1967-1968 were obtained from Office of Superintendent of Public Instruction, State of Illinois.

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APPENDIX TABLE II-A

Educational Attainment of Illinois 17-18 Year Olds

1969-1990

(1) Year	(2) Total Ill., Population[1] (000)	(3) Number of 17-18/2 Year Olds[2]	(4) Ratio of 17-18/2 Yr Olds to Total Ill. Population	Methodology Number One[3]			Methodology Number Two[4]		
				(5) Number of High School Grads	(6) Ratio of High School Grads to 17-18/2 Yr Olds	(7) Ratio of High School Grads to Total Population	(8) Number of High School Grads	(9) Ratio of High School Grads to 17-18/2 Yr Olds	(10) Ratio of High School Grads to Total Population
1969	11,012	192,583	1.75	149,759	77.26	1.36	145,959	75.79	1.33
1970	11,114	201,016	1.81	158,075	78.64	1.42	153,934	76.14	1.38
1971	11,180	203,529	1.82	164,209	80.68	1.47	155,700	76.50	1.39
1972	11,243	209,927	1.87	173,144	82.48	1.54	161,329	76.85	1.43
1973	11,285	216,966	1.92	177,372	81.75	1.57	167,498	77.20	1.48
1974	11,343	219,995	1.94	173,379	78.81	1.53	170,606	77.55	1.50
1975	11,395	224,434	1.97	180,912	80.61	1.59	174,834	77.90	1.53
1976	11,509	226,825	1.97	179,677	79.21	1.56	177,513	78.26	1.54
1977	11,613	230,448	1.98	182,476	79.18	1.57	181,135	78.61	1.56
1978	11,716	231,487	1.98	181,364	78.35	1.55	182,782	78.96	1.56
1979	11,842	224,829	1.90	179,238	79.72	1.51	178,312	79.31	1.51
1980	11,953	220,748	1.85	172,890	78.32	1.45	175,870	79.67	1.47
1981	12,085	217,191	1.80	165,025	75.98	1.37	173,796	80.02	1.44
1982	12,226	211,668	1.73	167,085	78.96	1.37	170,118	80.37	1.39
1983	12,390	202,660	1.64	162,674	80.27	1.31	163,587	80.72	1.32
1984	12,532	192,567	1.54	152,521	79.20	1.22	156,133	81.08	1.25
1985	12,667	182,947	1.44	147,819	80.80	1.17	148,974	81.43	1.18
1986	12,720	180,736	1.42	143,510	79.40	1.13	147,806	81.78	1.16
1987	12,766	184,762	1.45	141,800	76.75	1.11	151,745	82.13	1.18
1988	12,784	193,017	1.51	143,598	74.40	1.12	159,220	82.49	1.25
1989	12,825	195,588	1.53	152,625	78.03	1.19	162,025	82.84	1.26
1990	12,860	198,159	1.54	155,599	78.52	1.21	164,848	83.19	1.28

1 Data for years 1969 and 1970 were obtained from U.S. Bureau of Census. Data for other years were calculated from Census Series P-25; Numbers 214, 375, 388 and 441.

2 Data were obtained by applying U.S. Census Bureau mortality and migration rates for Illinois against births reported by Illinois Department of Public Health and 1970 Census enumeration.

3 Data on high school graduates were obtained by use of the survival ratio method of grade level projections recently developed by the University Bureau of Institutional Research.

4 Data on high school graduates were obtained by use of a percentage of population calculated in previous studies by the University Bureau of Institutional Research.

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